

The Policy, System and Performance of the Technical and Vocational School Education in China: A Historical Perspective (1949-2022)

Wenjun MIAO

1. Introduction

1. 1. Research Background

Amid China's Labor Market Dynamics. Amidst the dynamic landscape of China's labor market, characterized by its remarkable economic and societal advancements, a series of challenges have surfaced. These challenges encompass an undue emphasis on higher education, incongruities within the labor market leading to mismatches, and a progressively widening disparity in labor market inequalities. Of notable significance is the escalating requirement for proficient and skilled professionals.

The “Analysis Report on Market Supply and Demand of Public Employment Service Agencies in 100 Cities for the Second Quarter of 2021”, released by China's Ministry of Social Security in August 2021, offers invaluable insights into the dynamics of the labor market. The recruitment ratio within the human resources market has consistently remained above 1.2 since the fourth quarter of 2017, indicating a persistent upward trend. Notably, the manufacturing industry accounts for 38.4% of the overall employment demands as of the second quarter of 2021. Particularly remarkable is the significant year-on-year surge of 47.3% in employment demands within the information transmission software and information technology service sectors¹.

A discernible need for individuals possessing technical qualifications and professional titles has emerged. Significantly, 40.7% of job prerequisites explicitly

1 The information is derived from the “Analysis Report on Market Supply and Demand of Public Employment Service Agencies in 100 Cities for the Second Quarter of 2021,” issued by Ministry of Human Resources and Social Security of the People's Republic of China.

stipulate technical credentials or professional titles. Noteworthy disparities exist in the demand for senior technicians, technicians, and senior skilled workers, with corresponding employment ratios of 3.05, 2.7, and 2.51.

1. 2. Research Purpose

To Examine the Imperative for Technical and Vocational Education (TVE) Enhancement. Recognizing the significance of technical and vocational education, China enacted the Vocational Education Law in April 2022. Article 3 accentuates the equalization of vocational and general education. This revised legislation ensures that vocational students have equal opportunities for further education, employment, and career advancement, thereby eliminating discriminatory policies. The evolution of both vocational and general education is intended to progress in harmony.

To Explore TVE's Historical Development. Given the economic and policy framework mentioned above, the importance of enhancing technical and vocational education (TVE) becomes clear. For those aiming to explore the potential of vocational education in driving high-quality progress in China, the initial step involves exploring its historical development, extracting relevant experiences and insights, and subsequently charting a path for the future.

Currently, technical and vocational education in China is categorized into two primary streams: technical and vocational school education, and technical and vocational training, as outlined by Wu & Ye (2018)². This article specifically directs its focus toward the domain of technical and vocational school education (TVSE), covering three crucial dimensions: policy, system, and development representation supplemented by statistical data. By drawing upon an extensive collection of original texts concerning China's TVSE policies, this study will comprehensively outline the evolution and transformative phases spanning from

2 Wu and Ye refer to Article 12 of the Vocational Education Law of the People's Republic of China that "the state shall, in accordance with the economic development level and the situation of universal education of various regions, implement the educational division at different stages mainly after junior middle school, institute and improve a technical and vocational education system under which technical and vocational education and vocational training shall be developed concurrently, and technical and vocational education shall be connected with other forms of education with coordinated development of both. Therefore, they concluded that technical and vocational education in mainland China includes two indispensable parts: One is vocational school education, the other is vocational training. The two parts are equal in status and complement each other."

1949 to 2022, while also presenting well-founded recommendations.

1.3. Article Structure

The analysis of TVSE development will be meticulously categorized into three distinct historical periods: 1949-1978, 1978-2000, and 2000-2022. Section 3 will explore the evolutionary trajectory of TVSE policies, while Section 4 will elaborate on the transformation of TVSE systems. These discussions will encompass the interplay between policies and systems across different historical epochs, illustrating how shifts in policy have intricately influenced the TVSE system. Additionally, in Section 5, this article will employ specific data to delineate both the achievements and shortcomings of TVSE development in China. The Section 6 will provide a comprehensive overview of the development of TVSE in China, and will subsequently offer relevant recommendations based on this analysis.

2. Literature Review

First, this article references multiple studies for a comprehensive view of China's TVSE policies, covering various policy aspects including administrative systems, operational frameworks, talent cultivation, facility construction, and teacher training (Li & Zhou, 2009; Schmidtke & Peng, 2012). It categorizes the historical trajectory of Chinese TVSE using phases proposed by Wu & Ye (2018) and Kuang & Shi (2019), highlighting stages of adjustment, correction, reform, improvement, and eventual stability. Kuang & Shi (2019) also present a framework encompassing restoration, reconstruction, and rapid expansion.

Second, building upon research by Liao (2004) and Stewart (2015), this article delves into the complexities of China's TVSE school systems. Liao emphasizes creating a flexible and efficient educational system suited to various local conditions, and Stewart's observations categorize the modern vocational education system into three segments: junior secondary vocational schools, upper secondary level, and tertiary vocational education. These viewpoints form the foundation of this article. However, there is a lack of comprehensive studies synthesizing the developmental history of China's TVSE system and its connection with policy evolution.

Third, based on the findings of the aforementioned research, this article

adopts a time frame division similar to Wu & Ye (2018): adjustment and turmoil (1949-1978), reform and enhancement (1978-2000) and sustained progress (2000-2022). In an effort to address the research gaps, this article not only comprehensively outlines the developmental process of vocational education in China but also provides an analysis of the interplay between policies and systems. This analysis is supplemented by data analysis to review the performance of China's vocational education.

3. Evolution of TVSE Policy During 1949 to 2022

3. 1. The Path of Adjustment and Development (1949-1978)

Background and Characteristics of TVSE Policies During 1949 to 1978. From 1949 to 1978, which encompassed the period from the establishment of New China to the beginning of reform and opening up, China faced economic underdevelopment and a significant need for skilled professionals. There was a strong emphasis on rapidly expanding secondary vocational education to support economic growth. However, during the Cultural Revolution, the vocational education approach, particularly the “part-time work-study schools”³, faced criticism, leading to a halt in vocational education progress due to political reasons.

Main Developmental Strategy: Focus on Developing Vocational Secondary Education Schools. In 1949, vocational schools in China had only 300,000 students combined. To align specialized secondary education with national progress, the Ministry of Education convened a nationwide conference on secondary education in March 1951 and established the direction for specialized secondary schools which were tasked with nurturing technical personnel in various sectors. In 1954, China introduced the Decision on Improving Specialized Secondary Education Policies. This policy outlined specific regulations, clarified leadership structures, and drew inspiration from Soviet educational practices to

3 Liu Shaoqi (刘少奇), the chairman of the PRC (1959-1965), developed the “two educational systems and two labor systems,” merging Marxist-Leninist theory with China's realities. It comprises two elements: full-time school and eight-hour work and part-time school with part-time work-study. Liu introduced this concept, which was widely tested and promoted in China's socialist education phase, offering valuable insights. Cities had part-time work-study specialized vocational schools, while rural areas established similar agricultural middle schools.

enhance teaching quality. Simultaneously, China formulated policies for technical schools. In 1954, the Ministry of Labor issued the Draft Interim Measures for Technical Schools, a comprehensive document governing school administration, curriculum, enrollment, and faculty.

Political Influence on Policy During this Period. From 1958 to 1960, during the Great Leap Forward Movement, the “part-time work-study schools” model emerged under the 1958 Instructions on Educational Work. In July 1961, the National Working Conference on College and Secondary School Adjustments led to reduced enrollments through the merger or dismantling of specialized secondary and rural vocational middle schools, continuing until the Cultural Revolution began.

The Cultural Revolution (1966-1976) brought a distinctive phase. On July 18, 1967, the People’s Daily published an article, “Overthrowing the General Backstage of the Revisionist Education Line,” falsely claiming that part-time work-study schools hindered development and should be banned, hindering vocational education progress, with general schools becoming the primary providers of secondary education.

3. 2. Manifestation and Reform: Structural Transformation of Secondary Education (1978-2000)

Background and Characteristics of TVSE Policies During 1978 to 2000. After the Cultural Revolution, China favored general education. Criticisms in the late 1970s highlighted the need for two graduate types: academic and vocational (Wu & Ye, 2018). A transformative shift began in 1978 with reform and opening-up policies, reviving TVSE.

Post the Third Plenary Session of the Eleventh Central Committee of the Party in 1978, the Chinese government introduced the Education Priority Development Strategy, aiming to rebalance educational institutions at all levels. It expanded agricultural middle schools, specialized secondary schools, and technical schools, setting the stage for TVSE reform and advancement. The primary goal was to balance general education and TVSE, fostering both and higher vocational education.

Rebalance General Education and TVSE. A pivotal moment occurred in 1980 with the publication of the influential document titled “Report on the Reform of the Secondary Education Structure” by The State Council of China.

Acknowledging the emerging status of TVSE, the report proposed strategies to substantially increase the enrollment of students in diverse vocational schools within the senior secondary education system. It delineated regulations governing the development of vocational education, encompassing curriculum, system, school administration, management, and academic faculty, thus laying the foundation for subsequent TVSE reforms.

In 1985, a pivotal moment arrived with The Central Committee of the Communist Party of China issuing the Decision on the Reform of the Education System. Firstly, this directive advocated for the expansion of vocational education and exposed historical biases against it. Secondly, this landmark policy marked the inception of higher vocational (specialist) schools, which catalyzed the establishment of higher vocational education⁴. Moreover, it provided clarity on the TVSE system for the first time, representing a foundational milestone in the development of China's TVSE system. Most importantly, the policy aimed to rebalance the general-vocational education ratio through a "diversification strategy" at the secondary school level⁵. It assigned a central role to vocational secondary education within China's TVSE framework.

Reflection on Shortcomings in TVSE. China made significant efforts to enhance TVSE during this period. In 1991, the State Council issued the Decision on Developing Vocational and Technical Education, acknowledging challenges in the 1990s, such as limited awareness in certain regions, inadequate investment, outdated management and educational systems, teaching quality, poor implementation of the employment access system, student motivation, and regional disparities. To address these issues and facilitate progress, the decision outlined objectives and strategies for the 1990s.

China's commitment to advancing TVSE was further emphasized in 1993

4 In his article "Research on the Connotative Development of Higher Vocational Education," Dong (2014) noted that in June 1999, the State Council, in the Decision on Deepening Education Reform and Comprehensively Promoting Quality Education, for the first time, proposed the vigorous development of higher vocational education. This initiative led to the gradual transformation of adult colleges and universities, into vocational and technical colleges, creating a collaborative effort aimed at nurturing technical application-oriented talents.

5 According to the policy, after completing junior high school, some students would attend general secondary schools, while others would pursue vocational education at the senior high school level. Similarly, some high school graduates would enroll in traditional universities, while others would opt for higher vocational education.

with the State Council's Outline on Education Reform and Development. This urged governments nationwide to prioritize vocational education, encouraging comprehensive development plans and collaboration among various sectors, leading to changes in the TVSE system.

Reform of Higher Vocational Education. Additionally, concerning higher vocational education, the State Education Commission of the PRC acknowledged the weakness of specialized courses within China's higher education system. In 1991, the Commission issued the Opinions on Strengthening the Work of Higher Vocational (Specialist) Schools, which proposed measures to enhance school quality, address employment concerns for graduates, and transform higher vocational (specialist) schools. These schools, once referred to as "compressed general undergraduate education," progressively evolved into a pivotal component of China's TVSE.

3. 3. Improvement and Steady Development (2000-2022)

Background and Characteristics of TVSE Policies During 2000 to 2022. The National Medium and Long-term Education Reform and Development Plan (2010-2020) emphasized the importance of vocational education in fostering skilled talent to support China's economic growth. It called for improvements in vocational education quality and expansion of vocational training programs. In addition, the "Made in China 2025" in 2015 focused on transforming China into a high-tech manufacturing powerhouse, this initiative highlighted the significance of vocational education in providing technical expertise. It emphasized modern apprenticeships and school-enterprise cooperation as crucial components⁶.

The Evolving Landscape of TVSE Legislation After 2000. China underwent significant regulatory improvements for TVSE during this era. In 1998, the government promulgated the Higher Education Law of the People's Republic of China, solidifying the fundamental framework for higher vocational education at a legal level. The Vocational Education Act, effective from 1996, mandated nationwide establishment and refinement of TVSE. The Educational

6 China's vocational education policies after 2000 have evolved to prioritize the development of a skilled workforce, aligning with the changing demands of its economy. The policies reflect a commitment to enhancing the quality of vocational education, fostering innovation in training approaches such as modern apprenticeships and school-enterprise cooperation.

Revitalization Action Plan for the 21st Century unveiled during the 15th National Congress of the Communist Party of China in 1998, envisioned an integrated TVSE system where primary, secondary, and higher vocational education harmonized with general education, in alignment with the Vocational Education Act.

To further enact the Vocational Education Act, the State Council released the Decision on Improving the Reform and Development of Vocational Education in September 2002. This decision outlined seven crucial avenues for enhancing TVSE, including recognizing its pivotal role, aligning TVSE with economic and social development, adapting teaching to meet societal and corporate needs, bolstering TVSE in rural and western regions, reinforcing the nexus between TVSE and labor market demands, augmenting education investments, and enhancing government leadership to ensure the sustainable and robust development of TVSE. This comprehensive decision furnished explicit guidance to address contemporary challenges facing China's TVSE.

Cultivation of Modern Apprenticeship System. In 2014, the Ministry of Education issued the Opinions on Launching the Pilot Modern Apprenticeship System. This initiative sought to improve the integration of work and talent training, enhance collaboration between TVSE schools and businesses, and establish a robust modern apprenticeship system. This marked the initiation of China's modern apprenticeship policy. Following this, China introduced its inaugural set of modern apprenticeship pilot programs in 2015.

The "Made in China 2025" unveiled by the State Council in 2015, delineated a comprehensive ten-year strategy for China's manufacturing sector. This strategic blueprint placed a strong emphasis on the modern apprenticeship system and school-enterprise collaboration as integral components for nurturing technical and skilled talent, thereby ensuring the advancement of the manufacturing industry⁷. In 2016, the Ministry of Social Affairs and Ministry of Finance jointly issued the Pilot Work Plan for the New Apprenticeship System

7 The Made in China 2025 initiative aimed to transform some traditional universities into applied technology institutions, establish practical training centers, and launch modern apprenticeship pilot programs to cultivate a highly skilled workforce. The initiative also encouraged collaboration between enterprises and educational institutions to develop research professionals, technical experts, and interdisciplinary talents required by the manufacturing industry. It advocated for reforms in the recruitment and training models for engineering doctoral and master's programs.

in Enterprises, with the objective of enhancing partnerships between TVSE schools and businesses.

Additionally, the Central Committee of the Communist Party of China and the State Council, in 2017, issued the Guiding Opinions on Quality Improvement Actions, highlighting the role of enterprises and TVSE in enhancing talent training. This emphasized the importance of modern apprenticeships and new enterprise apprenticeships in structural reforms aimed at improving supply-side quality.

Collaboration between the Labor Market and Vocational Education. The provision of vocational education is oriented towards high-value-added industries, with adjustments made to align with the pace of industrial transformation (Zheng & Yin, 2019). Additionally, there is a focus on offering vocational education programs that cater to disciplines within the tertiary industry sector. Zheng Hao, in his article, noted a significant shift in the composition of students in secondary vocational schools between 2014 and 2017, and the enrollment proportion change in tertiary industry subjects in secondary vocational schools⁸.

In 2021, the General Office of the Central Committee of the Communist Party of China and the General Office of the State Council issued the Opinions on Promoting the High-quality Development of Modern Vocational Education. This document emphasizes the importance of optimizing the vocational education supply structure, aligning closely with major national strategies, and staying attuned to the trends of industrial upgrading and technological advancements. It emphasizes that TVSE should promote the growth of essential majors aligned with societal requirements, modernize traditional majors, and discontinue

8 During 2014 to 2017, there was a notable increase in the proportion of students in the fields of transportation, education, and information technology, with each experiencing an increase of 1.58 percentage points, 1.5 percentage points, and 1.27 percentage points, respectively. Furthermore, in the span from 2005 to 2017, the enrollment proportion in tertiary industry subjects in secondary vocational schools exhibited an upward trend. This increase occurred prior to the corresponding rise in the proportion of the tertiary industry in the GDP, highlighting an interesting alignment between educational choices and economic shifts during this period (Zheng & Yin, 2019).

programs with oversupply or low employment rates⁹.

Continuous Support for TVSE. China's TVSE has been undergoing continuous reform and development in recent years. Recognizing the growing importance of TVSE, China has consistently introduced policies to support its advancement.

In 2019, the State Council introduced the National Vocational Education Reform Implementation Plan, outlining objectives and requirements for China's TVSE system. This plan aimed to establish an internationally advanced TVSE system within China by enhancing its quality and relevance.

In 2020, the Ministry of Education issued a notice regarding enrollment in secondary vocational schools. It emphasized the need to strike a balance between general and vocational education and expand opportunities for specialized secondary students to access higher-level vocational education.

A pivotal moment arrived in 2022 when China revised the Vocational Education Law, explicitly elevating vocational education to a level equal to general education in terms of legal significance. The revised law underscored the importance of deepening industry-education integration, strengthening school-enterprise collaboration, and prioritizing high-quality development within TVSE. This revision solidified China's unwavering commitment to fostering a dynamic and responsive technical and vocational education system.

4. Evolution of TVSE System in Response to Policy Changes During 1949 to 2022

4. 1. The Emergence and Transformation of TVSE System (1949-1978)

Background and Characteristics of TVSE System During 1949 to 1978. During this period, TVSE aimed at rapidly expanding vocational secondary institutions

9 The directive places a premium on fostering the development of various emerging fields critical to industries such as advanced manufacturing, new energy, new materials, modern agriculture, modern information technology, biotechnology, and artificial intelligence. Concurrently, there is an accelerated effort to establish programs in areas of immediate demand, including preschool education, nursing, healthcare, and housekeeping. Additionally, traditional majors like iron and steel metallurgy, chemical medicine, construction engineering, and textile manufacturing are earmarked for transformation and upgrading. Simultaneously, there is a concerted focus on phasing out majors characterized by oversupply, low employment rates, and diminishing job prospects. Educational institutions are actively encouraged to diversify their offerings by introducing more programs that cater to market demands. This approach aims to create a professional system seamlessly integrated with both the industrial and innovation chains.

to meet economic and political needs. The TVSE system was in its early stages, with aspects like management, school systems, and enrollment not highly developed. Vocational education transitioned into a public, democratic model, divided into primary and secondary levels, with a limited presence of higher technical education in colleges and universities, as stated by Bai (Bai & Su, 2012).

The Formation of TVSE System. In October 1951, the Government Administration Council introduced the Academic System Reform Regulations, establishing the framework for China’s education system from 1949 to 1958. This regulation delineated the distinct roles of various school types, including those focusing on vocational education, as illustrated in Figure 1.

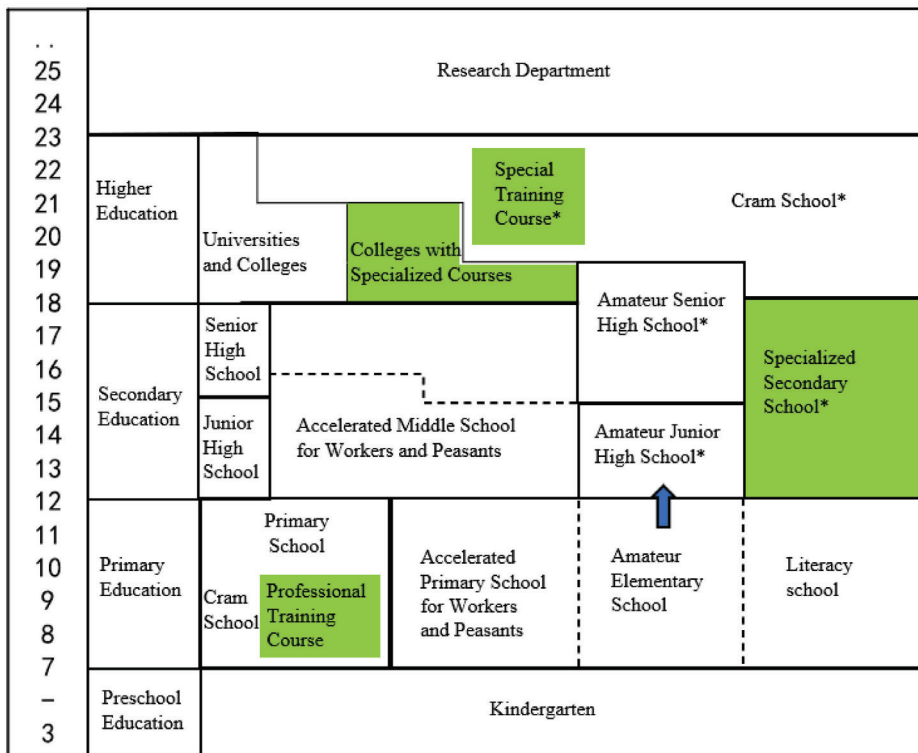


Figure 1 The Education System Stipulated in the Academic System Reform Regulations

Note: *Represents that this kind of school has no strict restrictions on enrollment age.

Data source: Adapted from Academic System Reform Regulations.

In the school management system, TVSE included specialized secondary schools and technical schools. Technical schools were established following the 1954 Draft Interim Measures for Technical Schools. Regarding the school-

running system, the 1954 Decision on Improving Specialized Secondary Education Policies specified study durations for various majors, mostly 3-4 years. In terms of funding, specialized secondary schools used a three-tier financial system, while technical schools adopted a people's bursary approach. The curriculum focused on a "learn by doing" philosophy, and teacher recruitment mainly involved full-time instructors with technical expertise.

The Disruption of TVSE System. From 1958 to 1978, China went through the Great Leap Forward, followed by a three-year adjustment phase and the Cultural Revolution. This period witnessed rapid yet unguided growth in TVSE under the "general line of building socialism with greater, faster, better, and more economic results." Specialized secondary schools, technical schools, and agricultural middle schools were central. Three school types emerged guided by The Instructions on Educational Work (1958): full-time, "part-time work-study," and amateur schools. From 1966 to 1976, during the Cultural Revolution, vocational education stagnated as the nation focused on general education.

4. 2. Progressive Enhancement of the Education System (1978-2000)

Restructuring of Secondary Education: Shaping the Landscape. From 1978 to 2000, a pivotal policy titled "Report on the Reform of Secondary Education Structure" played a central role in reshaping China's secondary education landscape. Traditional schools underwent conversions into vocational institutions, aided by legislation to standardize and legitimize vocational education. This period marked significant transformations in China's TVSE system.

Numerous regular high schools transformed into vocational (technical) schools, vocational middle schools, and agricultural middle schools. Vocational middle schools and agricultural middle schools emerged as institutions integrating general education with vocational and technical components, initiating diversified school offerings. Private secondary vocational schools also flourished, obtaining resources from village committees, individuals, local governments, and enterprises to retain rural talents. Simultaneously, governmental reforms aimed at restructuring vocational high school operational models.

The Foundation of Higher Vocational Education. The foundation of higher vocational education solidified during this era. Urban areas and prominent enterprises were encouraged to establish specialized colleges and short-term vocational institutions to diversify educational offerings. These institutions

charged tuition fees, followed daily study schedules, and admitted graduates based on merit to enhance investment efficiency and student competence. While specialized colleges were initially seen as condensed versions of undergraduate education lacking vocational attributes, they gradually assumed significant roles within the TVSE system post-1999. The introduction of five-year higher vocational education gained momentum¹⁰.

Evolution of School Form and Funding. During this period, secondary vocational education schools mainly recruited junior high school graduates with a 2–3-year schooling period. Technical schools admitted unmarried individuals aged 15 to 22 with junior high or senior high school diplomas (mainly junior high school graduates), offering a schooling period of three years and 1-2 years respectively¹¹. National financial appropriation was the primary source of education funding. After 1993, entrants and graduates of specialized secondary schools and technical schools paid fees for education, and graduates had more autonomy in job selection compared to earlier times of state-mandated job assignments¹².

Curriculum Structure: Synthesis of Theory and Application. The curriculum structure of TVSE emphasized integrating theoretical learning and practical application. In 1986, the State Education Commission introduced a curriculum framework¹³ for specialized secondary schools, encompassing general, core, and specialized courses. Engineering majors typically adhered to a ratio of 45:35:20, while adjustments were made for other disciplines.

Technical schools featured a curriculum blending cultural, technical theory, and practical courses¹⁴. Vocational senior high schools offered a curriculum

10 Information source: State Council's Notice Transmitting the Report from the Ministry of Education and the National Development and Reform Commission on Accelerating the Development of Higher Education (1983) and Notice Regarding Approval for the Pilot Implementation of Three Five-Year Technical Vocational Colleges (1985).

11 Information source: Notice from the Ministry of Labor and Personnel and the National Education Commission on Issuing Regulations for Vocational Schools in 1986 and Report on the Reform of Secondary Education Structure in 1980.

12 Information source: Outline of China's Educational Reform and Development, released by State Council in 1993.

13 Opinions on the Formulation and Revision of Teaching Plans for Full-time Regular Specialized Secondary Schools (Four-Year Programs) (Trial Implementation) was released by State Education Commission of the PRC in 1986.

14 Information source: Notice from the Ministry of Labor and Personnel and the National Education Commission on Issuing Regulations for Vocational Schools in 1986.

comprising political, cultural, professional, and internship categories, with proportions varying between engineering and liberal arts. At least 30% of class hours were allocated to professional studies, including internships¹⁵. By 1988, nine professional categories were officially recognized for specialized secondary schools, in accordance with the provisions stipulated in the National Directory of Professions (Trades) for Vocational High Schools.

Development of Teacher Training System. To tackle the shortage of TVSE academic staff, China initiated systematic teacher training endeavors. This included the expansion of vocational and technical teacher training colleges. In the late 1980s, universities such as Tianjin, Zhejiang, Tongji, and Xi'an Jiaotong established dedicated teacher training centers. After 1998, teacher training efforts expanded to encompass conventional universities and higher TVSE colleges, resulting in the establishment of 50 training bases for TVSE educators.

In 1993, qualification standards for TVSE teaching staff were defined by the State Council¹⁶. Vocational colleges recruited industry professionals, managers, and skilled artisans as part-time instructors. A dual-title system encompassing teaching and professional technical titles was implemented in TVSE institutions. Colleges and universities were encouraged to conduct separate teacher training programs to enlist graduates of specialized secondary schools as instructors.

4.3. Formation and Development of TVSE System with Chinese Characteristics (2000-2022)

Contemporary TVSE Landscape. Since the year 2000, a distinctive Chinese TVSE system has gradually taken shape. Building upon the reforms and advancements following the State Council's issuance of the Outline of China's Educational Reform and Development, the educational framework has evolved, as illustrated in Figure 2.

15 Information source: Opinions on the Formulation of Teaching Plans for Vocational Senior Secondary Schools (Three-Year Programs), released by State Education Commission of the PRC in 1986.

16 Qualification standards were defined in Outline of China's Educational Reform and Development, released by State Council in 1993.

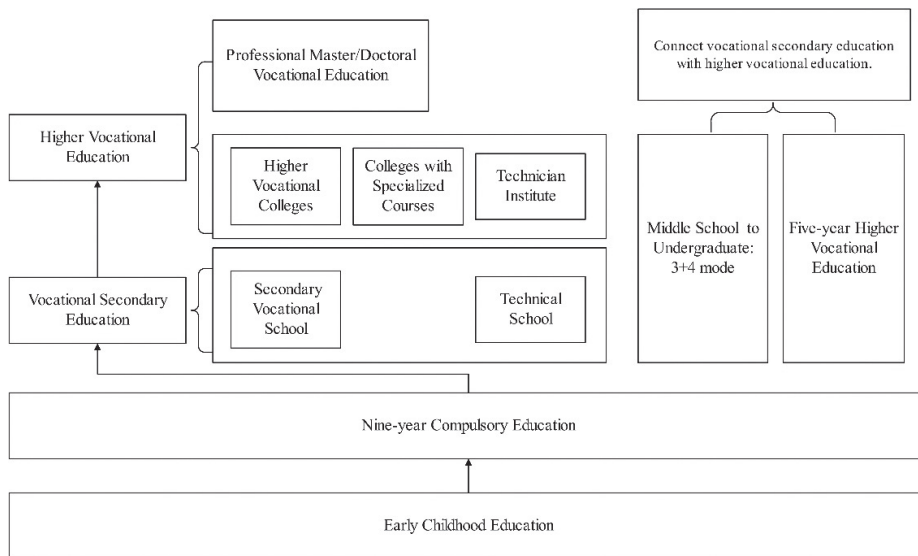


Figure 2 The TVSE System with Chinese Characteristics

Data Source: The author compiled this information based on relevant policies.

As evident in Figure 2, contemporary Chinese TVSE encompasses vocational secondary education, higher vocational education (2-3 years), and innovative combinations of secondary and higher vocational education. Vocational secondary education predominantly involves secondary vocational schools (3 years) and technical schools (2-6 years), with specialized secondary schools (3 years) and vocational senior secondary schools (3 years) falling under the umbrella of secondary vocational schools. A novel approach, such as the five-year higher vocational education and the middle school-to-undergraduate (3+4 years) model, provides a seamless educational journey for TVSE students from high school to undergraduate levels.

Modernizing TVSE Curriculum and Majors. China has been actively developing a modern TVSE curriculum system with a focus on employability. In 2008, China’s Ministry of Education initiated a shift in specialized secondary school teaching from subject-oriented to skill-oriented, aimed at nurturing students’ vocational abilities. TVSE institutions have increased the emphasis on professional skills courses, with these courses, including practical training,

typically constituting two-thirds of the total curriculum hours¹⁷. In 2009, the Ministry of Education delineated the vocational secondary education curriculum into two main categories: introductory public courses and professional skills courses. Introductory public courses generally account for about one-third of the total class hours, equivalent to approximately one academic year. Meanwhile, professional skills courses, comprising about two-thirds of the total hours, include substantial on-the-job practice amounting to approximately one academic year¹⁸.

When it comes to designing majors, alignment with market demand is crucial. The selection of TVSE school majors should reflect the human resource requirements of industries and enterprises, adapting to regional economic structures in accordance with the dynamics of industrial restructuring.

Evolution of Higher Vocational Education. In terms of higher vocational education, China's Ministry of Education adjusted curriculum content and study durations for higher vocational (specialist) schools in 2000¹⁹. Practical teaching methods like experimental courses, practice sessions, training, course design, and graduation projects were integrated into these schools. The standard study period for higher vocational (specialist) schools ranges from two to three years, with extensions for part-time programs. Typically, three-year majors involve around 1600-1800 class hours, while two-year majors generally entail 1100-1200 class hours. Practical teaching constitutes at least 40% of total teaching hours for three-year majors and not less than 30% for two-year majors.

In addition, the development of higher vocational education at the undergraduate level has been initiated. Starting from 2006, China's Ministry of Education has been advancing the elevation of private specialized courses colleges to undergraduate level. Non-governmental specialized courses colleges meeting specific criteria can seek approval to become undergraduate institutions. Traditional universities are encouraged to undergo transformation

17 Information source: The Ministry of Education issued the Several Opinions of the Ministry of Education on Further Deepening the Teaching Reform of Vocational Secondary Education in 2008.

18 Information source: The Ministry of Education issued the Principles of the Ministry of Education for Formulating Teaching Plans for Secondary Vocational Schools in 2009.

19 Information Source: The Ministry of Education issued the Opinions of the Ministry of Education on Strengthening the Training of Talents in Higher Vocational (Specialist) Schools in 2000.

into applied technology institutions through pilot programs and demonstrative guidance, with a focus on undergraduate vocational education. When an independent college evolves into an autonomous higher education institution, it's encouraged to define itself as an applied technology institution (Kuang & Shi, 2019).

Modernizing Teacher Training System and “Double-Qualified” Teachers.

Concerning teaching quality and faculty, China has blended modern network technology with education. Modern information technology is vital for enhancing teaching quality, promoting co-creation and sharing of teaching resources, and maximizing the use of high-quality teaching materials²⁰.

In 2006, China's Ministry of Education proposed that professional course teachers and practical instructors in specialized secondary schools engage in over two months of enterprise or production service practice every two years. Between 2007 and 2010, the Ministry of Education and Finance selected 250 exemplary educators for 1-2 months of international study, focusing on advanced vocational education teaching concepts and methods. This aimed to cultivate high-level vocational education teaching experts. Additionally, China optimizes the proportion of “double-qualified” teachers²¹, enhancing integration of academic qualifications and practical skills among educators.

Innovative School-Enterprise Collaboration and Modern Apprenticeships: Blending Practical Experience and Learning. To enhance the integration of practical experience and learning within TVSE schools, China actively promotes innovative methods of school-enterprise collaboration and modern apprenticeship. This involves schools tailoring talent development to meet

20 During the “Eleventh Five-Year Plan” period, China introduced 1,000 high-quality courses that blend work and learning to enrich curriculum development. About 3,000 nationally planned teaching materials have been developed in collaboration with industry companies, closely aligned with actual production.

21 “Double-qualified teachers” refer to an educational model where teachers possess both practical industry experience and expertise, as well as a background in classroom teaching and education. This model aims to ensure that students receive comprehensive training that encompasses not only theoretical knowledge but also practical skills. Double-qualified teachers are responsible not only for teaching methods and classroom management but are also skilled in imparting practical vocational skills and industry knowledge. The goal of this educational model is to provide students with more practical vocational skills training to meet market demands and enhance graduates' competitiveness in the job market. This educational model is widely employed in vocational education in China to promote skills training and career development.

industry demands, furnishing intern opportunities for students, while enterprises provide conducive learning environments. TVSE schools actively advocate the “double certificate”²² system, combining academic and vocational qualifications.

Alternatively, schools might partner with enterprises for teacher training, with businesses dispatching skilled professionals to offer educational services. Furthermore, the Chinese government encourages enterprises to establish research and development centers and experimental hubs within TVSE schools, enhancing program quality and curricular innovation. In the final year of specialized secondary school, students undertake internships in enterprises, while higher vocational college students dedicate at least half a year to practical training²³.

5. Development Representation of TVSE During 1949 to 2022

5. 1. Turbulent Development and Extremely Unbalanced (1949-1978)

In the initial years following the establishment of the People’s Republic of China, TVSE predominantly catered to the demands of economic development, leading to a steady growth of specialized secondary schools (SSS). However, the Cultural Revolution (1966-1976) severely impeded the progress of vocational education. This disruption resulted in an imbalanced development between general education and TVSE.

22 The “Dual-Certificate System” in Chinese vocational education refers to a system where students simultaneously earn two certificates upon completing their vocational training or education. One certificate typically represents the academic or theoretical aspects of their training, while the other certifies their practical skills and competence in a specific vocational field. The Decision on Accelerating the Development of Modern Vocational Education issued by the State Council of China in 2014 emphasized the active promotion of the dual-certificate system.

This system aims to provide a more comprehensive and holistic education by recognizing both the theoretical knowledge and practical abilities of students. It enhances graduates’ competitiveness in the job market by offering a well-rounded skill set, making them better prepared for real-world work scenarios. The dual-certificate system is an important component of vocational education in China, aligning education with industry needs and promoting career readiness among students.

23 In 2006, the Ministry of Education issued a policy document titled “Opinions of the Ministry of Education on the Pilot Implementation of the Combination of Work and Study and School-Enterprise Cooperation in Vocational Education.” This policy aimed to vigorously promote the training model that combines work and study and encourages collaboration between educational institutions and enterprises. It aimed to gradually establish and improve the system of work-study integration, achieving a new breakthrough in the reform and development of TVSE education in China in the new era.

Table 1 *The Development Situation of SSS and RSSS between 1949 and 1978*

School	Growth rate		Annual average growth rate (%)	
	1949-1978	1949-1957	1957-1965	1965-1978
SSS	135.7	1.5	-0.5	6.2
RSSS	2981.7	4.0	8.2	21.0

Note: SSS Specialized Secondary School. RSSS Regular Senior Secondary Schools.

Data source: China Statistical Yearbook 1999 20-2.

Preliminary Development. Under the influence of the First Five-Year Plan (1953-1957), TVSE played a crucial role in addressing the urgent need for intermediate and junior technical personnel in national construction. Notably, significant progress was observed in specialized secondary schools (SSS).

According to available statistics, in 1952, the number of SSS increased to 1,710, marking a 1.5-fold increase compared to 1949. By the end of the First Five-Year Plan in 1957, China had 1,320 SSS, enrolling 123,000 students, with 778,000 students attending classes. This represented a substantial increase of 122% in terms of in-school students compared to 1952.

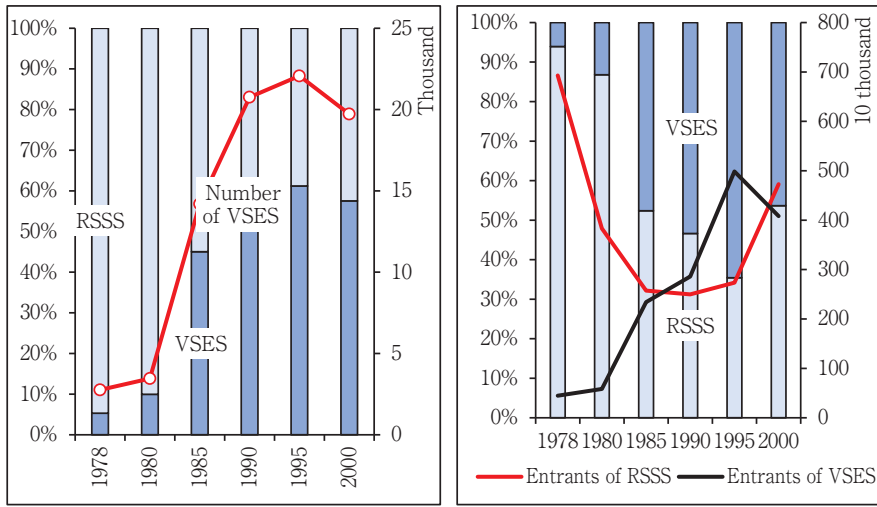
Uneven Development and Regression. After the end of the Great Leap Forward movement to the end of the Cultural Revolution, the development of general education and vocational education had become increasingly imbalanced. From 1957 to 1965, the average annual growth rate of RSSS was 8%, while that of SSS was -1% (Table 1). From 1965 to 1978, the average annual growth rate of SSS was 6%, while that of RSSS was 21%, nearly four times that of SSS. In 1978, the number of SSS was 2760, while that of RSSS was 49215.

5. 2. Steady Development and Achieved a Relatively Balanced State (1978-2000)

The Policy Context During this time Period. In 1978, China embarked on a path of reform and opening-up, which led to rapid economic growth. During this period, TVSE experienced significant development, in line with policies aimed at enhancing various types of secondary vocational schools within the secondary education system.

To stimulate the growth of TVSE, two key measures were implemented. The

first involved the revival and establishment of specialized secondary schools (SSS) and technical schools (TS). The second measure entailed the substantial expansion of vocational senior secondary schools (VSS) through the transformation of certain traditional middle schools into vocational secondary schools. The term Vocational Secondary Education Schools (VSES) included not only SSS and TS but also other vocational schools operating at the senior high school level.



a) School Numbers

b) Entrants

Figure 3 Changes of Schools and Entrants in the Composition Ratios of Secondary Education at the Senior High School Level in China

Data source: China Statistical Yearbook 2021 21-5, 2022 21-9.

Consistent Development of Vocational Secondary Education School. According to the data from China Statistical Yearbook, the number of VSES schools experienced rapid growth during this period at an average annual growth rate of 9.4%. In the year 2000, the total number of VSES schools reached 19,727, which represented an approximately six-fold increase compared to the number in 1978. At the same time, the number of RSSS schools decreased by about 70% during this period. This might had been influenced by the policy of converting regular high schools into vocational secondary schools. Furthermore, the proportion of VSES schools in China’s senior high school education increased

significantly, rising from 5.3% in 1978 to 57.5% in 2000 (Figure 3). As a result, the number of VSES schools even surpassed that of regular senior high schools.

Between 1978 and 2000, the average annual growth rate of VSES enrollment was 10.6%, resulting in an overall increase of approximately 9 times in the total number of VSES enrollments. On the other hand, the enrollment in RSSS declined by 32%. In the year 2000, RSSS enrolled 4.727 million students, while VSES enrolled 4.083 million students, with RSSS enrollment slightly surpassing that of VSES. The general-to-vocational enrollment ratio in 2000 was approximately 1.5:1, although not achieving complete balance, China made progress in achieving a better regular-to-vocational enrollment balance compared to 1978.

5. 3. Comprehensive Development of TVSE but still with Shortcomings (2000-2021)

The Policy Context During this time Period. Influenced by the policy Decision of the State Council on Vigorously Promoting the Reform and Development of Vocational Education in 2002, both the “quality” and “quantity” of the TVSE system gained equal importance. Beginning in 2001, the cultivation of high-quality skilled talents became a new objective for TVSE. Despite some notable achievements, challenges persisted, including a decrease in the growth rate and an imbalanced education system.

The Process Status of TVSE Schools at the Senior High School Level. From 2000 to 2021, the number of VSES schools in China decreased by approximately 50%, reaching 9786 in 2021, and their share within the senior high school system dropped from 57% to 40%. The composition of school types in VSES remained relatively stable during this period. According to China Statistical Yearbook, over these two decades, secondary vocational schools (SVS) consistently represented the largest portion of VSES, accounting for 76% in 2021, while adult specialized secondary schools (ASSS) had the smallest share at 10%.

In contrast, the count of RSSS (14585 in 2021) remained relatively stable throughout this period. As indicated in Figure 4, the annual growth rate of VSES declined and remained negative for an extended period, with only RSSS showing slow growth. However, after 2016, the number of RSSS schools began to increase more rapidly.

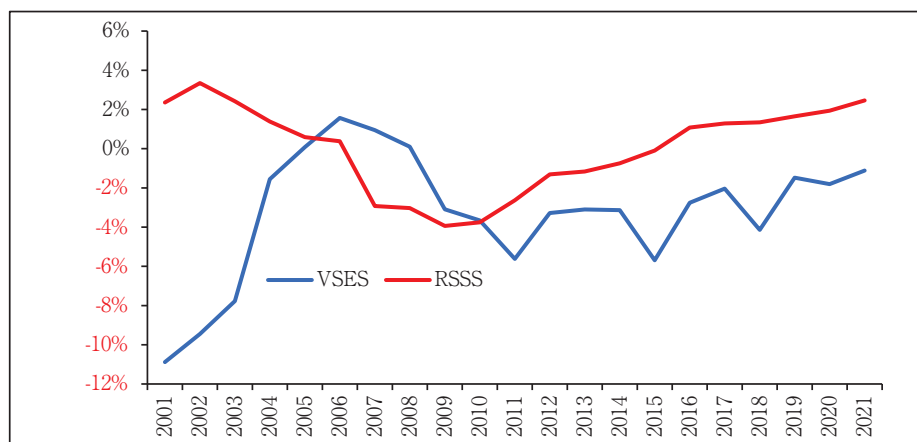


Figure 4 *The Growth Rate of VSES and RSSS Schools*

Data source: China Statistical Yearbook 2022 21-26, 2022 21-11.

The Enrollment Situation within Senior High School Education. From 2000 to 2021, in the Chinese senior high school education system, the general-to-vocational enrollment ratio has exhibited a brief trend of equilibrium followed by an increasing imbalance. Figure 5 illustrates the annual changes in enrollment numbers for VSES and RSSS and the corresponding variations in the general-to-vocational enrollment ratio. During the period from 2000 to 2010, the general-to-vocational enrollment ratio gradually evolved towards a balanced state at approximately 1:1. However, after 2010, the general-to-vocational enrollment ratio started to experience an increasing imbalance, resulting in a widening gap between the enrollment numbers of VSES and RSSS (Figure 5).

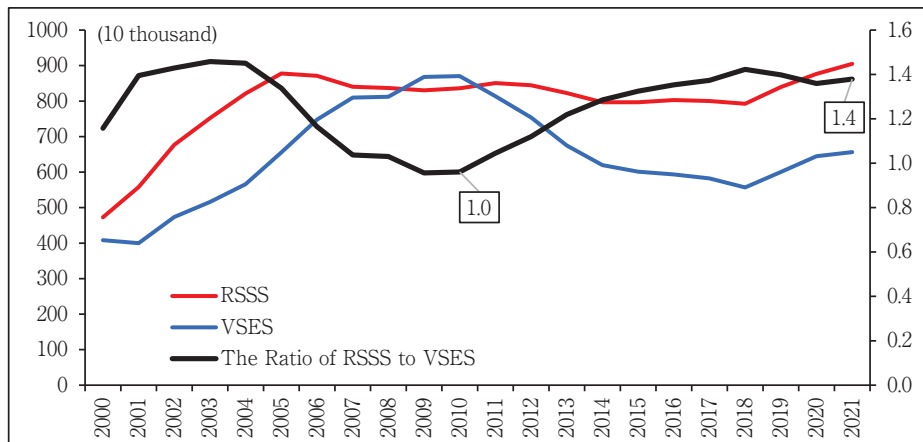
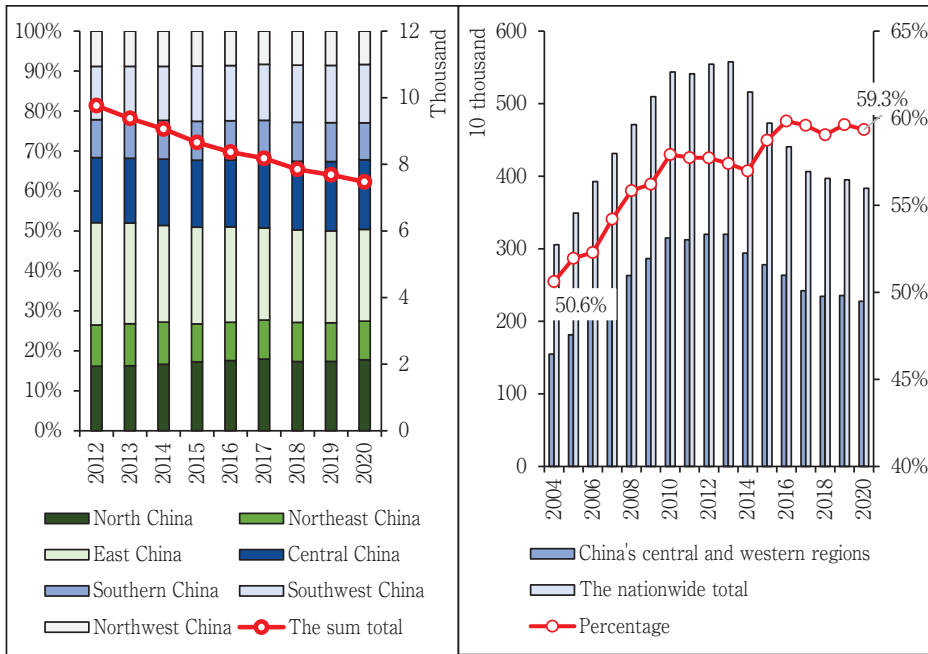


Figure 5 *The Enrollment Changes in the General Vocational Enrollment Ratio in Chinese Senior High School Education*

Data source: China Statistical Yearbook 2022 21-9, 2022 21-11.

Regional Disparities in Senior High School Education. In the period from 2012 to 2020, the Eastern region consistently had the largest proportion of vocational schools, and the distribution of schools across regions remained stable (Figure 6a). In 2014, the State Council emphasized the need to establish vocational schools in densely populated and economically disadvantaged areas with specific industrial needs. Consequently, by 2020, about 59% of VSES graduates came from the central and western regions, totaling around 2.28 million graduates, representing a stable growth trend (Figure 6b).



a) Regional Disparity

b) The Changing Proportion of Graduates from VSES

Figure 6 Regional Disparities in the Number of VSES and Changing Proportion of Graduates from VSES

Data source: China Statistical Yearbook 2013 20-33, 2014 21-33, 2015 21-27, 2016 21-27, 2017 21-17, 2018 21-17, 2019 21-17, 2020 21-17, 2021 21-17.

Note: The term “Central and Western regions” is a general designation for China’s Central and Western regions, and it mainly includes 18 provinces (autonomous regions and municipalities).

Assessment of TVSE Teacher Resources. TVSE has made notable progress in teacher resources. According to 2022 data from China’s Ministry of Education, over 55% of TVSE subject teachers now hold dual qualifications, exceeding the 50% threshold (56% in vocational secondary schools, 59% in higher vocational colleges, and 59% in undergraduate vocational colleges). In terms of their educational qualifications, 94% of vocational secondary school teachers have undergraduate degrees or higher, rising to 99% in higher vocational colleges. Furthermore, 41% of full-time teachers in higher vocational colleges possess postgraduate degrees or higher, addressing the longstanding issue of inadequate

teacher qualifications effectively.

In general, the number of full-time teachers in VSES has remained relatively stable since 2004. However, there has been a growing disparity in full-time teacher numbers between VSES and RSSS. In terms of development rates, both VSES and RSSS have exhibited significant fluctuations in the number of full-time teachers, showing a negative growth trend over the past decade (Figure 7). In 2004, VSES employed approximately 0.94 million full-time teachers, and by 2020, this number had increased to 1.14 million. In addition, RSSS had around 1.19 million full-time teachers in 2004, and this number increased to 1.93 million in 2020.

In 2020, the student-to-teacher ratio in VSES slightly decreased from approximately 6.0 in 2004 to 5.7 in 2020. In contrast, the student-to-teacher ratio in RSSS became 4.5 in 2020. This indicates that VSES faces relative inadequacy in terms of teacher resources when compared to RSSS (Figure 7b).

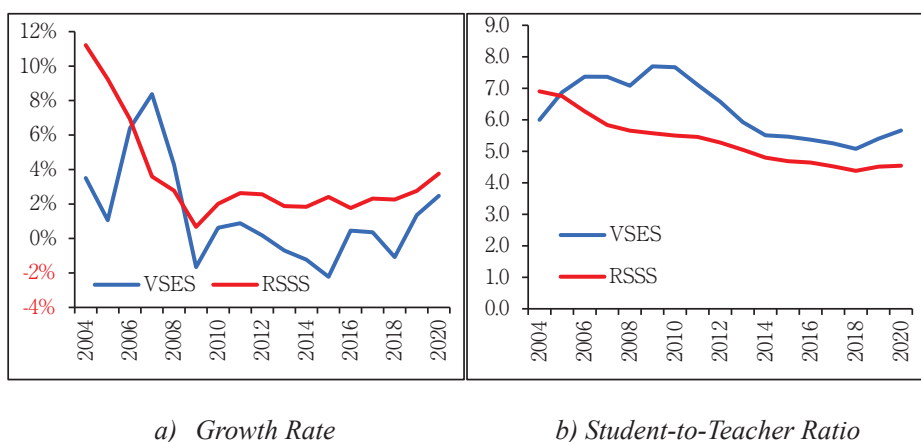


Figure 7 The Growth Rate and Student-to-Teacher Ratio of VSES and RSSS Full-Time Teachers
Data source: China Statistical Yearbook 2022 21-9, 2021 21-1, 2020 21-1, 2019 21-1, 2018 21-1, 2017 21-1, 2016 21-1, 2015 21-1, 2014 21-1, 2013 20-1, 2012 20-1, 2011 20-1, 2010 20-1, 2009 20-1, 2008 20-1, 2007 21-1, 2006 21-1, 2005 21-1.

The Development of Higher Vocational (Specialist) Schools (2000-2021). Since 2000, China has implemented multiple policies to promote the development of higher vocational education. In the year 2000, there were 442 higher vocational (specialist) schools (HVS). By 2021, this number had grown to over three times the original count, with a total of 1,486 HVS schools. The number of HVS has

seen continuous and steady growth, with its proportion among all Regular and Vocational HEIs (RVHEIs) increasing from 42.5% in 2000 to 53.9% in 2021. Although the growth rate of HVS schools has declined in the past decade, the overall trend has remained positive, indicating sustained development (Figure 8).

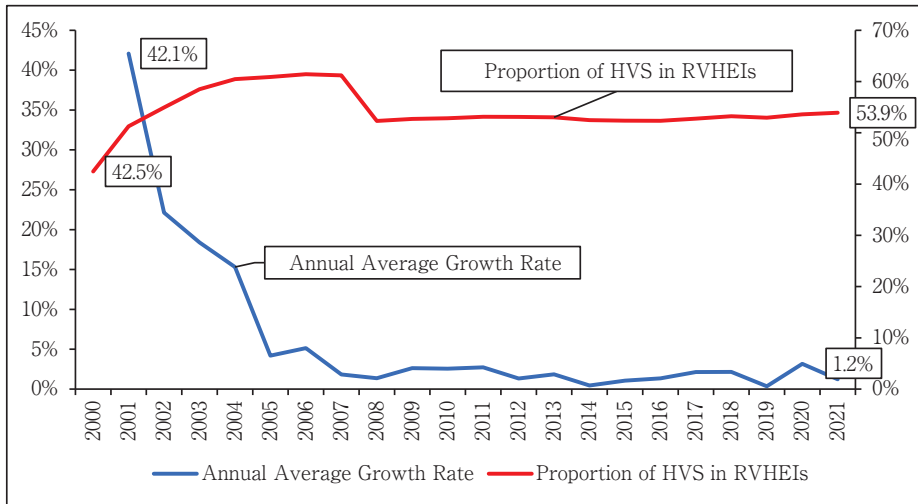


Figure 8 The Annual Average Growth Rate of HVS and Proportion of it within RVHEIs
 Data source: China Statistical Yearbook 2022 21-6.

6. Conclusion

6. 1. Brief Summary

This section will provide a comprehensive summary and evaluation of the discussed policy and system changes in TVSE, along with an analysis of the performance and development of it based on relevant data. Building upon this assessment, Section 6 will offer recommendations and a glimpse into the future of vocational education in China. Here is a summarized journey of the changes in TVSE in China:

a) Pre-reform Era (1949-1978):

During the early stages of the PRC, the main strategy was to foster the development of vocational secondary education. At that time, there were not many formal policies in place to support the growth of TVSE. Vocational education, in this period, was primarily delivered through apprenticeships and part-time work-study programs. The foundation of the TVSE system, however,

was predominantly built upon the Academic System Reform Regulations. Nonetheless, it played a pivotal role in cultivating a skilled labor force essential for the nation's industrialization endeavors.

b) Post-1978 to 2000:

In the period following 1978 and extending up to 2000, China embarked on a journey of economic reforms and global engagement. This era witnessed a substantial surge in investment and expansion in the realm of vocational education. The nation's objective was to revamp and diversify its workforce in alignment with the changing economic landscape. Throughout the 1990s, there was a remarkable expansion of TVSE. The government bolstered its support for TVSE institutions, while also extending its assistance to higher vocational education. These initiatives culminated in a wider array of TVSE programs and a notable uptick in enrollment figures.

c) Emphasis on Quality (2000-present):

In the 2000s, China shifted its focus towards improving the quality of TVSE. Curriculum reform, teacher training, and cooperation with the business sector became priorities. The current modern TVSE system is comprehensive, spanning from level of junior high school to colleges, complemented by a modern apprenticeship system, dual-qualified teaching staff, and a dual-certificate talent development model. School terms and school management have also become increasingly refined, aligning more closely with students' learning trajectories. Most importantly, while China's TVSE strives for higher quality, several challenges persist. As highlighted in Section 5, it is evident that despite the significant accomplishments within the TVSE, the past decade has witnessed a renewed expansion in the ratio of general education to vocational education enrollment at the high school level. Despite this, TVSE continues to grapple with uneven development across different regions, with the teacher-student ratio in vocational education remaining lower compared to that in general education.

6. 2. Suggestions and Future Outlook

In the near future, China's TVSE faces several challenges, including imbalanced scale, structural disparities, school-enterprise collaboration issues, a shortage of qualified teachers, and limited societal recognition. High-quality development, supported by the revised Vocational Education Law, is an ongoing

process.

One primary challenge is the perception gap between vocational and general education. The new law addresses this by elevating the status of technical professionals, promoting national vocational skill competitions, and ensuring equal opportunities for TVSE students in further education and career advancement. Improving school-enterprise collaboration is crucial, with the government encouraging joint investment in talent development.

Enhancing teaching staff is a key focus. The law emphasizes “dual-qualified” teachers and establishes a national teacher development and training system, including tailored positions and innovative recruitment approaches.

The new Vocational Education Law also emphasizes the importance of TVSE and vocational training institutions. Quality development in TVSE will produce more qualified graduates, encouraging students to enroll in vocational schools and stimulating the growth of vocational training institutions, significantly shaping the future of technical and vocational education in China.

This article, constrained by word count, primarily focuses on TVSE, leaving other aspects of technical and vocational education unexplored. Future research aims to provide a more comprehensive perspective, encompassing funding, teaching staff, and undergraduate-level vocational education.

Appendix

Chinese-English Translation Correspondence Table

Chinese name	English Translation	Abbreviation in Essay
中等专业学校	Specialized Secondary School	SSS
中等职业教育	Vocational Secondary Education School	VSES
中等职业学校	Secondary Vocational School	SVS
成人中等专业学校	Adult Specialized Secondary School	ASSS
技工学校	Technical School	TS
职业中学	Vocational Secondary School	VSS
职业高中	Vocational Senior Secondary School	VSSS
普通高中	Regular Senior Secondary School	RSSS
高职（专科）院校	Higher Vocational (specialist) Schools	HVS
普通、职业高等学校	Regular and Vocational HEIs	RVHEIs

References

- Bai, H.G. & Su, M. (2012). The Evolution of China's Vocational Education System. *Chinese Vocational and Technical Education* (18), pp 60-66. (in Chinese)
- Dong, G. (2014). *Research on the Connotative Development of Higher Vocational Education*. Beijing: Higher Education Press. (in Chinese)
- Kuang, Y. & Shi, W.P. (2019). 40 Years of Reform in Chinese Vocational Education. *China Reading Weekly* (008). (in Chinese)
- Li, M.Q. & Zhou Y. (2009). Summary of China's Vocational Education Policies in the 60 Years Since the Founding of New China. *Education and Vocation* (36), pp 5-8. (in Chinese)
- Liao, Q.F. (2004). Experiences in and Lessons from the Development of Contemporary China's School System Reform. *Journal of Nanjing Teachers College*, 20 (02), pp 9-16. (in Chinese)
- Stewart, V. (2015). *Made in China: Challenge and Innovation in China's Vocational Education and Training System*. Washington, DC: National Center on Education and the Economy.
- Shen, J.L. (2008). A Historical Review of the Vocational Education System and Policies since the Founding of New China. *Journal of Jiangsu Teachers University of Technology* (08), pp 5-12. (in Chinese)
- Schmidtke, C. & Peng C. (2012). Philosophy of Vocational Education in China: A Historical Overview. *Journal of Philosophy of Education* (46), pp 432-448.
- Wu, X.P. & Ye, Y.Q. (2018). *Technical and Vocational Education in China*. Beijing: Higher Education Press.
- Zheng, H. & Yin, D.T. (2019). Vocational Education Changes in the 70 Years of New China. *Population and Health* (12), pp 28-33. (in Chinese)

Abstract

The Policy, System and Performance of the Technical and Vocational School Education in China: A Historical Perspective (1949-2022)

Wenjun MIAO

This article delineates the trajectory of China's technical and vocational education (TVE) advancement, encompassing the period from the establishment of New China to 2022, with a specific focus on technical and vocational school education (TVSE). The developmental trajectory is dissected along the dimensions of policy, system and performance, elucidated in a chronological sequence.

The evolution of Chinese TVSE spanning 1949 to 2022 is delineated into three distinct phases: 1949-1978, 1978-2000, and the post-2000 era, each characterized by unique policy and systemic attributes. From 1949 to 1978, China established a foundational system primarily centered on specialized secondary schools and technical schools. Post-1978, a diverse array of technical and vocational schools began to emerge. Particularly in the contemporary era, post-2000, China has been shaping a modern TVSE system infused with distinct Chinese characteristics. Each temporal phase is underpinned by unique guiding policies, resulting in distinct TVSE systems characterized by their own defining attributes. In addition, this article aims to provide an integrated assessment and analysis of China's TVSE at different time periods, combining policy backgrounds and developmental performance using the formal data.

China has attained notable milestones in the realm of TVSE, as evidenced by the proliferation of diverse school typologies and an expanding societal acknowledgment. Nonetheless, an equilibrium between general education and vocational education remains elusive, accompanied by prevalent biases against vocational education. The imperative to augment the caliber of TVSE persists.

Keywords: TVE, TVSE, policies and systems, performance, chronologically, modern TVSE system